data format in which a broadcast address is caused to be a destination address and a media access control address of a corresponding data station is caused to be a source address to send out a packet to a wireless network and to detect a loop to hold normal a communication state.--

IN THE CLAIMS

Please amend claims 1-19 by rewriting same to read as follows:

--1. (Amended) A radio station connected by wire to a first wire network including a first plurality of pieces of communication terminal equipment connected by wire and connected by radio to a second wire network including a second plurality of pieces of communication terminal equipment connected by wire and adapted for transmitting and receiving a plurality of communication data packets,

the radio station comprising:

identification packet generating means for generating an identification packet having a predetermined form of the communication data packets;

wireless communication means for transmitting and receiving the plurality of communication data packets between the wireless communication means and the second wire network;

wire communication means for transmitting and receiving the plurality of communication data packets between the wire communication means and the first wire network;

identification packet detecting means for detecting the identification packet generated by the identification packet generating means; and

control means for controlling the identification packet generating means to generate the identification packet and for controlling the identification packet detecting means to detect the identification packet.

--2. (Amended) The radio station as set forth in claim 1, wherein the control means changes a communication mode in the wireless communication means when the identification packet is detected by the identification packet detecting means.

--3. (Amended) The radio station as set forth in claim 2, further comprising selector means for selecting a wireless communication channel for transmitting and receiving the plurality of communication data packets from a plurality of wireless communication channels,

wherein the control means selects a wireless communication channel at the selector means to change the communication mode.

--4. (Amended) The radio station as set forth in claim 2, further comprising ciphering means for enciphering each of the plurality of communication data packets transmitted and received by radio between the ciphering means and the second wire network based on a cipher key,

wherein the control means changes the cipher key at the ciphering means to change the communication mode.

--5. (Amended) The radio station as set forth in claim 1, wherein each of the plurality of communication data packets includes a wire destination address portion indicating one piece of communication terminal equipment of the first and the second pluralities of pieces of communication terminal equipment serving as a destination of the communication data packet and a wire transmit source address portion indicating one piece of communication terminal equipment of the first and second pluralities of pieces of communication terminal equipment serving as a transmit source of the communication data packet,

wherein the identification packet detecting means sets the wire destination address portion equal to the wire transmit source address portion.

--6. (Amended) The data station as set forth in claim 5, wherein the wire destination address portion and the wire transmit source address portion are each addresses of the radio station.

--7. (Amended) The radio station as set forth in claim 1, further comprising wireless address adding means for adding a wireless destination address portion indicating a destination when transmitting and receiving operations are performed by

radio and a wireless transmit source address portion indicating a transmit source when the transmitting and the receiving operations are performed by radio to each of the plurality of communication data packets sent from the wireless communication means to the second wire network.

--8. (Amended) The radio station as set forth in claim 7, wherein the wireless destination address portion of the identification packet includes broadcast addresses in which each of the plurality of pieces of communication terminal equipment connected to the radio station and each of the plurality of pieces of communication terminal equipment connected to the wire network are the destination.

--9. (Amended) A data packet transmitting and receiving method of transmitting and receiving a plurality of communication data packets by radio between a first radio station connected to a first wire network including a first plurality of pieces of communication terminal equipment connected by wire and a second radio station connected to a second wire network including a second plurality of communication terminal equipment connected by wire,

the method comprising the steps of:

generating an identification packet, the generation performed by the first radio station and the identification packet having a predetermined form of each of the plurality of communication data packets;

transmitting the identification packet generated in the identification packet generation step to one of the first wire network and the second radio station, the transmission performed by the first radio station;

determining whether the communication data packet received from one of the second radio station and the first wire network is the identification packet, the determination performed by the first radio station; and

changing a communication mode between the first radio station and the second radio station when the communication data packet is the identification packet.

--10. (Amended) The data packet transmitting and receiving method as set forth in claim 9, further comprising the step of selecting a wireless communication channel for transmission of the communication data packet from a plurality of wireless communication channels to change the communication mode based on the wireless communication channel selected in the selection step.

--11. (Amended) The data packet transmitting and receiving method as set forth in claim 9, further comprising the step of enciphering the communication data packet based on a cipher key to change the communication mode based on the cipher key used in the ciphering step..

--12. (Amended) The data packet transmitting and

receiving method as set forth in claim 9, wherein in the identification packet generation step the identification packet is generated including a wire destination address portion indicating one piece of communication terminal equipment of the first and the second pluralities of communication terminal equipment serving as a destination of the communication data packet and a wire transmit source address portion indicating one piece of communication terminal equipment of the first and the second pluralities of communication terminal equipment as a transmit source to set a same address with respect to the wire destination address portion and the wire transmit source address portion.

--13. (Amended) The data packet transmitting and receiving method as set forth in claim 9, wherein when the identification packet is transmitted to the second radio station the wireless destination address portion serving as the destination when the transmitting and receiving operations are performed by radio and the wireless transmit source address portion serving as the transmit source when the transmitting and receiving operations are performed by radio are added to the identification packet.

--14. (Amended) A communication data packet transmitted and received by radio between a first radio station connected to a first wire network including a first plurality of pieces of communication terminal equipment connected by wire and a

second radio station connected to a second wire network including a second plurality of pieces of communication terminal equipment connected by wire,

the communication data packet including:

a destination address signal in which a destination address indicates a transmit destination to each of the first and the second pluralities of pieces of communication terminal equipment connected to the first wire network and the second wire network;

a wireless transmit source address signal indicating a transmit source to each of the first and second pluralities of pieces of communication terminal equipment when transmitting and receiving operations are performed by radio;

a wire destination address signal indicating the transmit destination of the first plurality of pieces of communication terminal equipment connected to the first wire network and the second plurality of pieces of communication terminal equipment connected to the second network; and

a wire transmit source address signal indicating the transmit source of the first plurality of communication terminal equipment connected to first wire network and the second plurality of pieces of communication terminal equipment connected to the second wire network,

wherein the wire transmit source address signal is equal to the wire destination address signal.

--15. (Amended) The communication data packet as set

forth in claim 14, wherein the wire destination address signal is an address of the radio station that sends out the communication data packet.

--16. (Amended) A wireless network system of transmitting and receiving a plurality of communication data packets between a first radio station connected to a first wire network including a first plurality of pieces of communication terminal equipment connected by wire and a second radio station connected to a second wire network including a second plurality of pieces of communication terminal equipment connected by wire,

wherein the radio station comprises: identification packet generating means for generating an identification packet that is a communication data packet having a predetermined signal form; and identification packet detecting means for detecting the identification packet from the plurality of communication data packets.

--17. (Amended) The wireless network system as set forth in claim 16, wherein a communication mode between the first radio station and the second radio station is changed based on a detection result of the identification packet detecting means.

--18. (Amended) A wireless network apparatus for performing transmission of a plurality of communication data

packets between a first wire network and a second wire network by radio,

the wireless network apparatus comprising:

loop detection packet generating means for generating each of the plurality of communication data packets of a predetermined form for detecting a loop of the communication data packet; and

detecting means for detecting the loop detection packet from a plurality of received communication data packets.

--19. (Amended) The wireless network apparatus as set forth in claim 18, wherein a communication mode is changed based on a detection result of the detecting means.--

REMARKS

Claims 1-19 remain in the application and have been amended hereby.

As will be noted from the Declaration, Applicants are citizens and residents of Japan and this application originated there.

Accordingly, the amendments to the specification are made to place the application in idiomatic English, and the claims are amended to place them in better condition for examination.

An early and favorable examination on the merits is